Public Health
Seattle & King County
HEALTHY PEOPLE. HEALTHY COMMUNITIES.

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Update: Laboratory Testing and Reporting for West Nile Virus, 29 August 2003

The following update is to review and update laboratory specimen submission and reporting procedures for West Nile virus in King County.

An arboviral encephalitis/meningitis case report form is available to health care providers in King County to facilitate complete and efficient reporting of suspected and confirmed WNV cases in King County residents. Additional copies of the case report form can be obtained by calling 206-296-4774 or on the Public Health website West Nile virus page for health care providers (http://www.metrokc.gov/health/westnile/).

Laboratory Testing for WNV: The most efficient diagnostic method is detection of IgM antibody to WNV in *serum collected within 8-14 days of illness onset* or *cerebral spinal fluid (CSF) collected within 8 days of illness onset* using the IgM antibody capture enzyme-linked immunosorbent assay (MAC-ELISA). ELISA testing is available for *hospitalized patients* through the Washington State Public Health Laboratories (WA PHL). Commercial laboratory testing is available to diagnose patients with suspected mild forms of WNV infection.

- **Testing can be arranged only after reporting and consultation with Public Health – Seattle & King County, the WA PHL will not test specimens without confirmation of the case report from Public Health.**

Submit 1 cc of CSF and/or separated serum (not whole blood) for ELISA testing

- If acute sera and/or CSF specimens are negative, submit convalescent serum 2-4 weeks after the acute specimen.
- Specimens should be refrigerated and transported cold. Frozen CSF is acceptable.
- **Specimens should be submitted with a completed WSDOH PHL *Virus and Rickettsial Examinations* form to the Public Health - Seattle & King County Laboratory, 325 9th Ave, Box 359973, Seattle, WA 98104-2499 (telephone, 206-731-8950)**.

WNV cannot be distinguished from other causes of meningoencephalitis on clinical grounds. Testing for other common causes of aseptic meningitis/encephalitis syndrome is encouraged, including culture and/or PCR testing for enteroviruses and herpes viruses. Specimens will be tested for WNV after pending results from tests to identify other etiologies are available. (See: Olin, et al. Aseptic meningitis epidemic during a West Nile virus avian epizootic. Emerg Infect Dis, 2003;9:1082-1088, available at: http://www.cdc.gov/ncidod/EID/vol9no9/03-0068.htm)

Test Interpretation: IgM antibody develops by day 8 and IgG antibody within 3 weeks after illness onset. When indicated, convalescent serum specimens should be drawn about 3-4 weeks after acute specimens. **Negative results on any specimen obtained <8 days after onset of illness should be considered inconclusive and a convalescent serum specimen, obtained at least 2 weeks after the first specimen, will be needed to make a final determination**. Cross-reactions may occur among patients who have had yellow fever or Japanese encephalitis vaccination, or a previous history of arboviral encephalitis or dengue fever.

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What to report: Hospitalized adult or pediatric patients with any of the following clinical syndromes:

1) Viral encephalitis, a clinical diagnosis characterized by:
   a) Fever ≥38°C or 100°F **and**
   b) CNS signs may include altered mental status (altered level of consciousness, confusion, agitation, or lethargy), coma, or other cortical signs (cranial nerve palsies; paresis or paralysis, or seizures), **and**
   c) Abnormal CSF profile suggestive of viral etiology: a negative bacterial stain and culture, CSF pleocytosis and/or moderately elevated protein
2) Aseptic meningitis occurring May through November in any patient ≥18 years of age, characterized by:
   a) Fever ≥38°C or 100°F **and**
   b) Signs of meningeal inflammation (stiff neck, headache, photophobia) **and**
   c) Abnormal CSF profile suggestive of viral etiology: a negative bacterial stain and culture, CSF pleocytosis, and/or moderately elevated protein
3) Presumed Guillain-Barre syndrome or acute flaccid paralysis even in the absence of fever and other neurologic symptoms.
4) Suspected West Nile virus infection in patients with potential recent blood donation or transfusion histories, organ transplant recipients, laboratory or occupational exposures, transplacental or breast-feeding associated exposures.
5) **Laboratory confirmed WNV infection in any patient.**

Additional Information on WNV is available at:

CDC WNV web site: http://www.cdc.gov/ncidod/dvbid/westnile/index.htm
Public Health – Seattle & King County WNV web site: http://www.metrokc.gov/health/westnile/
Washington State Department of Health WNV web site:
http://www.doh.wa.gov/ehp/ts/Zoo/WNV/WNV.html